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ORGANIZATION AND MANAGEMENT OF EDP INSTALLATIONS

Most people, when they hear talk about computation or data processing centres are either intrigued or scared by the mystery surrounding the fact that non-living things can become as smart as (if not smarter than) living things to the point of rivalling the human mind. The mystery is kept alive by data processing people who continue to practice their profession like magic, using abracadabra beyond the ken of ordinary mortals, making people forget that the computer, like any other machine, was created by the human mind.

Far from inspiring fear, the computer (together with all the paraphernalia which go to make it a computation centre) should be seen as a mere device that humankind has invented to make life easier and be admired as such. Computation centres make life easier only when their installation, organization, equipment and management have been properly mastered. The greatest thing about computation centres is not who heads them but the person, most often a novice, who is entrusted with establishing centre.

First and foremost, the genuine needs of users will have to be identified and classified in a defined order of priority that best serves their interests. The criteria for setting up a computer centre to meet overall national needs, the technical needs of a ministry or simply to provide technical backstopping for a population census, are not the same. In selecting equipment, much depends on the nature of needs to be satisfied, their urgency and the priority accorded to them. Such needs should not be identified in some so-called feasibility study but should be based on a detailed, meticulous and accurate assessment of what needs to be done, how it is to be done and why it is being done.

Once the needs have been defined, the next thing is to make a comprehensive list of equipment available on the market that could possibly satisfy the needs. The list should be as comprehensive as possible, covering all geographical areas where equipment is manufactured and taking into account political spheres of influence and the economic interest areas of monetary zones. While the United States of America is a clear leader in terms of quantity and quality of equipment produced, the United Kingdom, France, the Federal Republic of Germany, Italy and Japan have equipment which, though not as competitive in all respects, can meet specific needs at prices which are reasonable when the political, economic and monetary climate is considered. The list should reflect the pervading and overwhelming presence of major data-processing equipment producers but should not overlook the fact that they are not necessarily the sole producers and their equipment not necessarily the best or the least expensive. Some virtually unknown brands are being marketed by small manufactures (who have for diverse reasons broken away from the big manufacturers) at prices ranging from 200 to 300 per cent less than the major brands.

While taking the ident ified needs into account, the comprehensive list should lead to a recommendation of three machines generally. These three should have been chosen on the basis of three different criteria: the brand name, the geopolitical, economic and financial sphere of influence and the technical performance of the machine. From these three criteria, a single final selection will be made on the basis of the user's concerns, preoccupations and means. Naturally prices to be paid by the clients, delivery schedules, component parts and maintenance form other important criteria that, unfortunately, are not always taken into account and often lead to misunderstandings and failures.

Once the equipment has been selected, the site must be prepared. Buildings should be built or refurbished to house the computation centre. In this case, it is better to be well prepared than ill-prepared. Spacious, high-ceilinged, well ventilated and conditioned rooms are always better than modern rooms that feel crowded. Any claims by salesmen or promoters that air-conditioning is not necessary should be discounted. Weather changes during the day from day to day and from season to season and good air-conditioning should be preferred to frequent repairs. A computation centre is always considered to have too much space at the beginning but then extensions are soon made to the equipment and if too many allied pieces of it are concentrated in one place, the temperature will rise in accordance with the number of equipment pieces being used at a time. When all the components are operating at full power in hot weather, good air-conditioning helps to keep the temperature even and constant.

Without adequate staff, the quality of machines and proper preparation of the site would amount to nothing. The first category of staff whom users never think about is that of hardware engineers. These are electronic engineers trained to install, maintain equipment and make it last. They must have proper tools and component parts. To date computer sellers have been providing such engineers but increasing, users (in particular small African users) should recruit their own maintenance engineers if they want their computation centre to keep functioning. The second category of staff is that of data processors. Chief among them is the head of the centre. His selection should be conducted with seriousness and without favouritism, He should be competent, qualified and especailly discreet. A head of centre who has too many things to explain is often a bad leader. To identify a good head of centre, the person should be placed before a switched-off computer.. If he manages to switch it on, load the software and to operate the computer, he is good to begin with and a little additional training on the job which he can give himself will enable him to adapt to the specific needs of the centre.

He should be assisted by a deputy, one or more programm analysts who are well acquainted with the problems involved and some programmers. The operators and tape library manager can be trained very quickly on the job by the head of centre.

When all the foregoing conditions have been fulfilled the centre is ready though not operational. Developing and acquiring software are the most exiting aspect of work at a computation centre. The computer must be made to speak and work. It needs a language, a methodology and logic based on its own internal structure. Such software and programmes take a long time to develop and are very expensive to buy. The selection of equipment is sometimes greatly influenced by the availability, performance and cost of the required software. Software should be acquired prudently and rationally in order to avoid wasting resources and buying wrong. It is not their quantity which counts so much as the quality of service that can be obtained from them.

Organizing and managing computer centres appears to be a very simple and yet complex operation. It becomes simple if all the criteria involved are rational. It becomes complex if trial and error and irrational approaches are used. Whatever the circumstances, no system is proof against monumental errors that should humbly be admitted and corrected as soon as possible. Establishing and managing a computer centre is still a great mystery. However it is now part of computer wizardry. All one needs to understand it is to be initiated as a wizard.